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## Generating Solutions to the Hardwood Industry's Technology-Based Problems

by Kate Hayes

Coordinator, Technology Transfer Information Center, NAL

"The first, most critical step, in technology transfer is that the potential providers and potential users of technology must be brought together....

...bringing people and organizations together so they can discover each other, remains the foremost challenge and one that we must continue to stimulate. If we're successful in linking innovators in our federal labs to entrepreneurs in business, they will make the technology transfer process work."

— Allen Bromley

The National Agricultural Library (NAL) has joined two other agencies to collaborate on a project that has a similar philosophy to that espoused by OSTP's Allen Bromley. Partner agencies are USDA's Extension Service (ES) and the National Institute of Standards and Technology (NIST), Department of Commerce. Systems managers for the project are: Kate Hayes, Coordinator of NAL's Technology Transfer Information Center, and Ted

Maier, a National Program Leader for ES. Joe Berke, Chief of the Research and Technology Applications Program, is the NIST liaison.

The premises for the technology transfer project are that:

- Trade associations, which provide training and technical assistance to their members, serve as vehicles for identifying industry-wide needs.
- The Federal government, which spends about \$70 billion annually in research and development, constitutes a vast, largely



The logo of the Technology Transfer Information Center portrays a "network" that links the people, facilities and processes that are involved cooperatively in moving technology from its source to other potential users.

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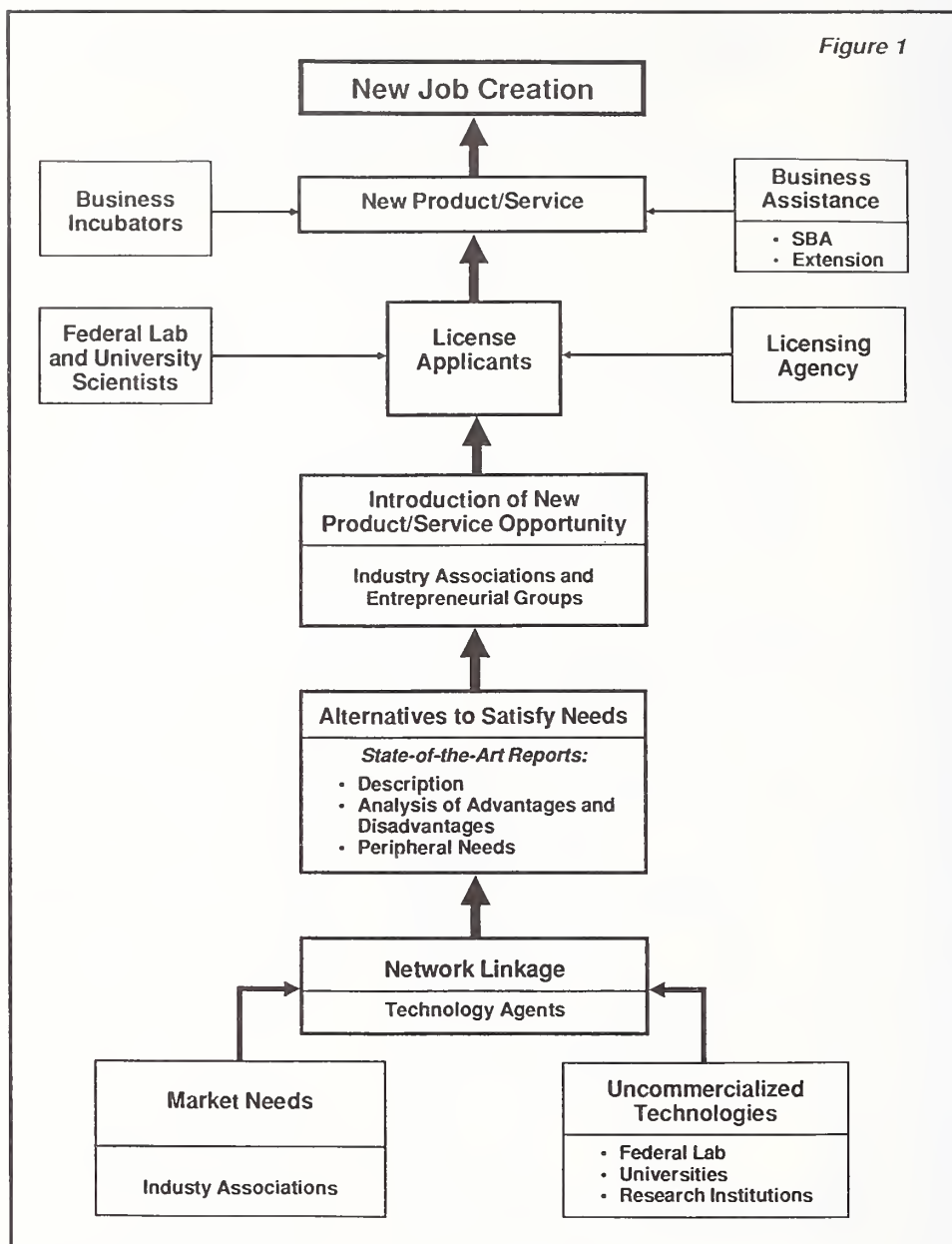
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...and more



- Implementing the technological solutions provides industry with new products, new processes, and increased profits.
- Manufacturing new products, based on the technological solutions, may create new jobs and new industries.

### Selecting the Industry Association

Figure 1 depicts both the process for and the participants in this extensive project. The team of Maher and Hayes (referred to as the "Systems Managers") selected the Hardwood Research Council, representing the hardwood industry, based on the following criteria:

- The organization has a principal function to identify techniques with which the membership can improve productivity/profitability.
- The organization is not dominated by a small number of large firms.
- The industry represented by the trade association is suffering from foreign competition.

untapped resource for uncommercialized technological know-how, including research results and highly skilled technical personnel.

- National Agricultural Library and Extension Service professionals serve as the catalyst to bring industry and the research community together, and to further develop linkages and liaisons with other Federal agencies and laboratories.
- Trained "Technology Agents" can locate existing technologies that solve industry problems by searching the Federal laboratory, and university and private research systems.
- State-of-the-art reports will analyze technological solutions and evaluate the feasibility of commercializing them.

- The raw material and process inputs of the industry are becoming increasingly scarce or expensive (e.g., energy, labor, pollution control).
- The trade association membership is not comprised of a small number of localized firms.

In October 1987, the Council published *Research Priorities for Eastern Hardwoods*, which is based on an in-depth survey of member companies.<sup>2</sup> Many research needs are related to biologically based issues. However, the companies also identified many problems that relate to the industry's needs for improving operations in such areas as saw mills and kiln drying.<sup>3</sup> This hardwood industry needs list constituted a critical starting point—to search the research system for existing technologies.





photo: J. Swab

Hardwood User Requirements Committee members, (L-R) Ron Jorgenson, Jim Dearing, Jack Pitcher, Gerry Reynolds, and Val Mower added to the discussion of the industry's needs. Dr. Leslie Kulp, Head of NAL's Reference and User Services Branch, right, also attended the session.

## The Market

The National Hardwood Lumber Association, of which the Hardwood Research Council is a part, has 1,250 member firms that produce, sell, and use hardwood lumber. The forest industry, of which hardwood is a major component, has 45,000 establishments involved in primary or secondary wood processing. Most of these are small, family-oriented firms. In aggregate, they employ 1.7 million people and account for \$24.9 billion annually in wages and salaries.<sup>4</sup>

The hardwood industry comprises a significant sector of the forest-related economy with enormous potential markets, both domestically and worldwide. The *Hardwood Review Yearbook for 1990* puts the hardwood industry production figure at more than 11 billion board feet.<sup>5</sup> Hardwoods are used for flooring, paneling, trim, and millwork in home construction, and more extensively in furniture and cabinetwork.

Although the American furniture industry has been faced with rising competition from imports, the estimated 2,400 furniture manufacturers—more than half of which employ

fewer than 20 people—still consume about 2 billion board feet of domestic hardwoods per year.<sup>6</sup> Other significant uses of hardwood lumber are in the pallet industry, railroad cross-ties, and structural panel products. Manufacturing press dried paper and home heating constitute additional outlets for hardwood production.

Overall, the hardwood industry is characterized by a large number of small firms that are involved in timber harvesting and processing. Many of the firms operate in rural areas. Because of their small size and geographical remoteness, many of the firms typically do not have access to the technological resources of the Federal government and universities.

## Network Linkage

The bottom right portion of Figure 1 depicts the various sources of uncommercialized technologies. Systems Managers spoke to the representatives of the Federal Laboratory Consortium's Mid-Atlantic Region. After that, the technology transfer networks became obvious—either scientists came forward and volunteered to work with



photo: J. Swab

(L-R) Bob Holst, Naval Research Lab; Lamar Harris, Cooperative State Research Service; Donald E. Nelson, Extension Service; Ted Schoenborn, National Institute of Occupational Safety and Health; Ray Gilbert, NASA; Chris Murdoch, University of Maine; and Dean Herring, NASA, Research Triangle Institute listen closely to the discussion of the hardwood industry's technology needs.



photo: J. Swab

Paula Cohen represented the Animal and Plant Health Inspection Service. Dave Schumann represented the technology transfer program at the Forest Products Lab, Forest Service. The Forest Service will be an integral part of this collaborative effort.



photo: J. Swab

(L-R) Joe Berke, National Institute of Standards and Technology, Kate Hayes, NAL, and Dave Nagle, Naval Research Lab participated in the interchange.

USDA, or the ORTAs (Office of Research and Technology Applications) suggested we contact others who were working in similar areas of research.

On March 21, the National Agricultural Library hosted a meeting of five industry delegates (Hardwood User Requirements Committee, HURC) and 14 research representatives from the University of Maine; NASA Headquarters and a Technical Applications Team, Research Triangle Institute; Naval Research Laboratory, Department of Defense; National Institute of Occupational Safety and Health, Center for Disease Control, Department of Health and Human Services; National Institute of Standards and Technology, Department of Commerce; and the Forest Service, Cooperative State Research Service, Extension Service, and Animal and Plant Health Inspection Service, Department of Agriculture.

The purpose of this initial HURC meeting was to link the industry representatives to the innovators in the Federal laboratory and university research systems.

Jack Pitcher, Executive Director of the Hardwood Research Council, discussed the industry's 14 previously identified technology-based problems. At the same time, scientists asked questions about the existing technology and the parameters required of the new technology. After hours of discussion, HURC ranked the 14 priorities in order of their importance.

Dr. Christopher W. Murdoch, College of Forest Resources, University of Maine, agreed to develop problem statements on the top priorities: (1) Detection System to Identify Wetwood, (2) Cutting Technologies, (3) External and Internal Defect Detection, and (4) Alternatives to Petroleum-Based Biocides. Each statement provides an in-depth discussion of the problem, the present technologies, and the constraints and specifications for the new technologies.

In July, the Systems Managers sent the *Statement of Need: Detection System to Identify Wetwood in Standing Living Trees and in Cut Logs and Boards* to Federal Laboratory Consortium representatives, HURC, and the individuals who attended the March meeting.

Project representatives discussed their endeavors with the Deans of University Forestry Schools and the Joint Council on Food and Agricultural Sciences. They also developed and sent flyers about the project to the Association of University Technology Managers and the Society of American Foresters.

### Technology Agents

"Technology Agents", employed through Chris Murdoch at the University of Maine and funded by NAL and the National Institute of Standards and Technology, will ferret out potential technologies from the Federal laboratories, and the university and private research systems. Dr. Murdoch will investigate the priorities of wetwood and alternatives to petroleum-based biocides. Gary Holland of Kissimmee, Florida, and formerly with the Cooperative Extension Service, will conduct the research on cutting technologies. Sun Joseph Chang, Louisiana State University, will examine potential technologies for detecting external and internal defects.

The result of the Agents' "ferreting phase" will be four state-of-the-art reports that are due in June 1992. The reports will contain:

- A thorough technical discussion of the problem and the deficiencies of the available technologies;
- The industry parameters within which the technologies must work;





photo: J. Swab

Ted Maher, a National Program Leader with the Extension Service, USDA, discusses the philosophy behind the joint technology transfer project. He has been a program director for Public Technology, Inc., and the Executive Director of the Federal Laboratory Consortium for Technology Transfer. Dr. Maher is also the current President of the Technology Transfer Society's D.C. Chapter.



photo: J. Swab

Jack Pitcher, Executive Director of the Hardwood Research Council, says, "The last thing we want to be guilty of is recommending research to reinvent the wheel...Why call for more research when it is a strong technology transfer effort that is really needed." Pitcher outlined the hardwood industry's technological needs for the Federal lab and university research representatives.



photo: J. Swab

Kate Hayes, M.S., C.H.E., is the Coordinator of the Technology Transfer Information Center, National Agricultural Library, USDA. Prior to her NAL experience, Ms. Hayes was a Home Economist and County Extension Director with the Cooperative Extension Service, The Pennsylvania State University. She currently edits *T'Squared*, the monthly newsletter of the Technology Transfer Society.

- An analysis and evaluation of the potential technologies compared to the industry-established parameters;
- A recommendation on which technologies should be investigated further for possible commercialization; and
- A business opportunity statement that discusses the size of the market for the commercialized technology, replacement cycles, cost constraints, and other pertinent factors.

### Introduction of New Product/Service Opportunity

NAL will publish the survey findings and assist in conveying them to the research community, and the hardwood, manufacturing, and supplier organizations and industries. The options for this final step are somewhat dependent upon the findings.

Potential exists for NAL to host a major symposium to release the findings, or the project's key players (systems managers and technology agents) may discuss the findings at other major conferences held by forestry, manufacturing, and technology transfer organizations. The dissemination effort will promote knowledge utilization among relevant organizations.

### Product License Applicants

Firms interested in applying for a license to produce and

market the new technology may secure more detailed information from the laboratory or university scientist(s) identified in the state-of-the-art report.

The top third of **Figure 1** depicts the private sector's portion of the project where additional developmental work and funding may be required to commercialize the new technology.

### Roles of the Technology Transfer Information Center Staff and Other Federal Collaborators

Technology Transfer Information Center staff continue to explore their roles in not only providing science and technology information to users, but also in actually assisting with transferring technologies to the private sector. Staff roles that are specific to this project include those of:

- **Catalyst**, to bring industry representatives together with non-traditional sources of technology—Federal lab, university, and private research systems;
- **Funding source**, to provide seed money to explore the concept of developing state-of-the-art reports as a mechanism for identifying and conveying industry's needs and searching for technological solutions;
- **Pathfinder of information**, through electronic and human networks;
- **Marketing agent**, who assists in disseminating information on the problem, process, and solution;

(Right) Sarah Thomas, Associate Director for Technical Services, NAL, welcomed the Hardwood User Requirements Committee to NAL on behalf of Joseph H. Howard, NAL Director. Dr. Thomas gave an overview of the Library and its services with particular emphasis on NAL's information centers and their role with respect to focusing on issues and initiatives of both the President and the Department of Agriculture and on some of the Library's cooperative ventures with the land-grant university libraries.



photo: J. Swab

- **Researcher**, who is aggressively involved in the actual investigation of alternative technologies that lead to improved products and processes;
- **Economic change agent**, who serves as a link between agencies and industry, entrepreneurs, small businesses and non-profit organizations that either need assistance from federal labs or personnel, or aspire to commercialize products and services from federally- or university-developed technologies.

In conclusion let it be said that the authors of the state-of-the-art reports and the collaborators from the National Institute of Standards and Technology, Hardwood Research Council, Extension Service, and NAL will monitor closely the process and all of the outcomes of this long term and ambitious endeavor and will communicate them as widely as practicable.

## References

<sup>1</sup> D. A. Bromley, Director of the Office of Science and Technology Policy, testifying before the Regulation, Business Opportunities, and Energy Subcommittee of the House Small Business Committee, 5 October 1989.

<sup>2</sup> McLintock, Thomas F. *Research Priorities for Eastern Hardwoods*. Memphis, TN: Hardwood Research Council, October 1987, pp. 1-103.

<sup>3</sup> McLintock, pp. 58-103.

<sup>4</sup> U.S. Forest Service. (Brochure PA 1384, 1988, rev.) *U.S. Forest Facts*. [Washington, DC?]: U.S. Forest Service.

<sup>5</sup> *Hardwood Review Yearbook for 1990*. Charlotte, NC: Hardwood Publication Co., Inc, p. 54.

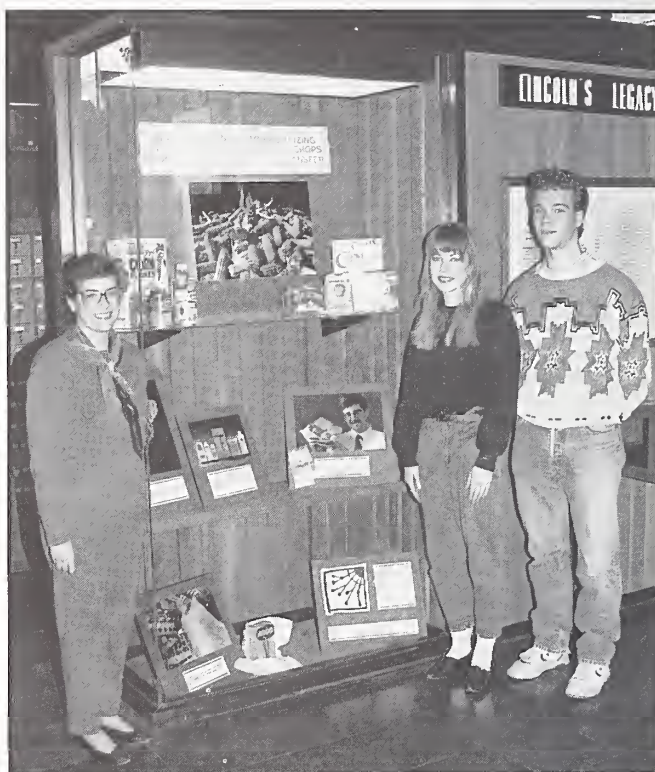
<sup>6</sup> McLintock, p. 24.

photo: J. Swab

(Below) Developing and Commercializing New Products from Surplus Crops is the theme for the technology transfer exhibit in the NAL lobby. The display features various corn products available on the supermarket shelves—corn oil and syrup; flakes; grits; cornmeal; canned, creamed, and dried corn; and “the father of all jokes”...popcorn! The photographs in the exhibit illustrate new commercial products that Agricultural Research Service scientists developed from corn.

- Body powders, absorption dressings, diapers, fuel filters, and thickening agents for waxes, paints, and polishes that absorb more moisture because of the addition of “superslurper.” Superslurper is a cornstarch product that can absorb 2,000 times its own weight in water.
- Low calorie desserts on the supermarket shelf may contain “fluffy cellulose,” a high fiber, no-calorie flour made from corn cobs.
- Biodegradable plastics contain cornstarch and petroleum-based polymers.

Technology Transfer Information Center staff who assembled the exhibit include: (L-R) Kate Hayes, coordinator; Lisa Spurlock, University of Maryland student; and Olaf van der Wiel, student intern from the Netherlands.



## TTIC Produces TQM and Quality Circles Bibliographies

The Total Quality Management (TQM) theory, developed in the United States and adopted by Japan, is a cooperative team approach to doing business. It relies on the talents and capabilities of both employees and employers to improve quality and productivity continually. **Participatory Management** is one of the key ingredients of a TQM strategy. It is a commitment on the part of management to involve all employees within the organization, even





photo: J. Swab

Hannah Stires



photo: J. Swab

Phoebe Bacon



photo: J. Swab

Bonnie Craighead

those at the lowest level, in the decision-making process.

The three TQM "gurus" in the United States, Deming, Juran, and Crosby, contend that **it is important to involve the whole organization**—every department, every activity, every single person at every level—to participate in the pursuance of quality.

**Quality Circles** were developed in Japan by Ishikawa and adopted in the United States as a management practice. A Quality Circle is a group of 3 to 12 people who are trained to: identify, analyze, and solve work-related problems; present solutions to management; and, where possible, implement solutions themselves. Members of quality circles do the same or similar work, and voluntarily meet together for about one hour per week in paid time, usually under the leadership of their own supervisor.

**Quality Circles are a key to enhancing communication** between employees and management. In this way, they help organizations succeed because they promote a system of mutual encouragement and exchange.

The Technology Transfer Information Center released *SRB 91-08, Total Quality Management, Participatory Management* (415 citations); and *SRB 91-09, Quality Circles* (364 citations) as "electronic research papers." Each Special Reference Brief has an introduction, numbered and alphabetical citations, and an author index. National Agricultural Library call numbers are indicated where appropriate.

Hannah Stires, a summer intern with the Technology Transfer Information Center, completed the comprehensive bibliographies. She also worked with the Director of the Federal Total Quality Institute in Washington, DC, to promote their release. Kate Hayes, Coordinator of TTIC,

and Susan Whitmore, formerly Head of NAL's D.C. Reference Center and now at Bureau of Mines, Department of the Interior, initiated the project and its preliminary development.

— Kate Hayes

## Technology Transfer Information Center Staff

Hannah Stires, a senior at St. John's College in Annapolis, MD, completed two bibliographies during her summer assignment with the TTIC. The bibliographies are available as *SRB 91-08, Total Quality Management and Participatory Management* and *SRB 91-09, Quality Circles*.

Phoebe Bacon, a graduate student at the University of Maryland's College of Library and Information Science, has been working on another information product that will be released soon, *Technology Transfer: A Profile of Agency Activities in USDA*, revised 1991. Phoebe recently transferred from TTIC to NAL's Rural Information Center.

Bonnie Craighead, MLS, joined NAL's Technology Transfer and the Biotechnology Information Centers staff on July 15. For TTIC, she's working on an index for the Technology Transfer Society's monthly newsletter, *T'Squared*, and has been assisting the Agricultural Research Service with searching. Bonnie previously worked as a project librarian on a Federal Emergency Management Agency contract with Greenhorne & O'Mara; a reference librarian with the Prince George's County (Maryland) Memorial Library System, and a paralegal with the FBI.

— Kate Hayes



## Special Events

# Program for IAALD Symposium

Speakers and activities for the upcoming "Symposium on Advances in Information Technology" are being finalized. The symposium, which is sponsored by the International Association of Agricultural Information Specialists (IAALD) and hosted by the National Agricultural Library will be held September 16-20, 1991, at the Holiday Inn in Beltsville, Maryland, near the NAL building.

The registration fee for the symposium is \$490.00. This includes an opening night reception and three lunches. For further information or registration forms, contact:

*Gary K. McCone*  
Information Systems Division  
National Agricultural Library, 5th Floor  
10301 Baltimore Boulevard  
Beltsville, Maryland 20705-2351  
Telephone: (301) 344-3813  
Fax: (301) 344-5473

## Preliminary Symposium Program

### Monday, September 16, 1991

8:00-9:00	Registration
9:00-9:45	Welcome — Joe Howard, NAL/IAALD Welcome — Jan van der Burg, PUDOC/ IAALD
9:45-10:00	NAL Video
10:00-10:30	BREAK
10:30-11:15	Gary Vacin, University of Nebraska, "Will We Manage — or Be Managed — by In- formation Technology?"
11:15-12:00	Roy Ackmann, Justus-Liebig-Universität Giessen, FRG, "A Video-text Program for Information in Nutrition: Access to Literature and Factual Databases"
12:00-1:00	LUNCH
1:00-2:00	Jan Mark Pohlmann, Technische Universi- tät München, FRG, "Problem Solving Strategies for Agricultural Expert Sys- tems"
2:00-2:45	Guy Waksman, Association de coordina- tion technique agricole, France, "Agro- informatics and Decision Support Sys- tems in France"

2:45-3:15	BREAK
3:15-4:15	Eckehard König and Anton Mangstl, ZADI, FRG, "The Use of an Expert System to Assist Retrieval from Agricultural Data- bases"
4:15-5:00	Torben Friis, DataCentralen, Denmark, "Computer-Assisted Indexing"
6:00-8:00	RECEPTION hosted by the Associates of the National Agricultural Library

### Tuesday, September 17, 1991

8:00-9:00	Bill Hooten, INET, "Digital Image and Op- tical Disk Technologies: Brief Overview"
9:00-9:45	Dan Cotter, Federal Emergency Manage- ment Agency, "An Overview of GIS Technology"
9:45-10:15	BREAK
10:15-11:15	Judith Zidar, National Agricultural Library, "Optical Scanning and Text Recognition — Preparing for the Information Age"
11:15-12:00	Ann Okerson, Association of Research Libraries, "Electronic Journals"
12:00-1:00	LUNCH
1:00-2:00	Fred Durr, NISC, "Full Text and Data on CD-ROM"
2:00-2:45	Mary Miller, Interactive Design & Develop- ment, Virginia Tech, "Multimedia CD- ROM Applications"
2:45-3:15	BREAK
3:15-4:15	Pauline Zoellick, "The CGIAR CD-ROM Project"
4:15-5:00	Robert Oakley, Georgetown University Law Center, "Intellectual Property in the Electronic Environment: Copyright Issues for Creators and Users of Electronic Information"

### Wednesday, September 18, 1991

8:00-9:00	Ron Larson, University of Maryland, "Over- view of Telecommunications Issues"
9:00-9:45	Paul Evan Peters, Center for Networked Information, "Networked Information Resources and Services"
9:45-10:15	BREAK
10:15-11:15	John Ulmschneider, North Carolina State University, "Image Transmission Project"
11:15-12:00	George Thoma, National Library of Medi- cine, "Automated Document Delivery Prototype System"
12:00-1:00	LUNCH
1:00-2:00	Howard McQueen, CD Consultants, "CD- ROMs on LANs"
2:00-2:45	Lynne Personius, Cornell University, "Cor- nell's Preservation Project"
2:45-3:15	BREAK
3:15-5:00	NAL Tour and New Technology Demon- strations

(Continued on next page)

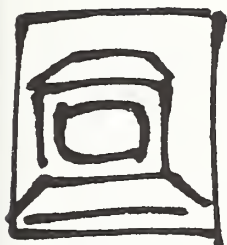


**Thursday, September 19, 1991**

- 8:00-5:00 Participants will be able to select one or more from the following list of activities:
1. Technology briefing at Library of Congress.
  2. Technology briefing at National Library of Medicine.
  3. Tour of Beltsville Agricultural Research Center.
  4. Visit extensive exhibits at Federal Computer Conference.
  5. Individual appointments with NAL staff.

**Friday, September 20, 1991**

- 8:00-9:00 Deborah Shaffer, Pennsylvania State University, "PENpages"
- 9:00-9:45 Pat Harris, National Information Standards Organization, "New Technology and Standards"
- 9:45-10:15 BREAK
- 10:15-11:00 Russell Forte, USDA Office of Public Affairs, "International Access to USDA Information Through CIDS (Computerized Information Delivery Service)"
- 11:00-11:45 Wrap-up Panel: Pamela Q.J. André, NAL; Eckehard König, ZADI; Edith Hesse de Polanco, CIMMYT; Jacques Schippers, Wageningen Agricultural University.
- 11:45-12:15 Symposium Evaluation / Discussion
- 12:15-12:30 Joe Howard, Close Symposium



**AGRICOLA**

## NAL Now Provides Article Abstracts for 338 Journals

The Library's bibliographic database, AGRICOLA, now has abstracts of articles contained in 338 journals related to agriculture. AGRICOLA (*AGRICultural OnLine Access*) contains the bibliographic records of almost 3 million agriculturally related books, journals, monographs, theses, patents, software programs, audiovisual materials and technical reports. It gives users quick access to the collections of NAL and its cooperators.

With the expanded abstracts feature of AGRICOLA, researchers, scientists, and other users of agricultural information can get a synopsis of articles dealing with just about all phases of agriculture from agronomy to zoology.

"Including abstracts of articles from this many journals is a major improvement to the AGRICOLA database," said

NAL Director Joseph Howard. "The abstracts quickly let NAL users know whether a particular article would be helpful in their research. It can save hours of research time."

This is the latest in a number of improvements NAL has made in recent years to make agricultural information more accessible to those who need it, according to Howard.

"We have developed several new systems involving such technology as laser discs, CD-ROMs, and computer networks which make it easier for the world to use the agricultural information contained at NAL," Howard said. "But AGRICOLA is the ultimate guide to the NAL collection and any improvement to it will tremendously benefit the agricultural research community."

Online access to AGRICOLA is available from the following commercial vendors:

*BRS Information Technologies*  
1200 Route 7  
Latham, NY 12110  
(800) 345-4277  
(518) 783-1161

*DIALOG Information Services, Inc.*  
3460 Hillview Avenue  
Palo Alto, CA 94304  
(800) 3-DIALOG  
(415) 858-3810

Users may also purchase AGRICOLA on Compact Disc-Read Only Memory (CD-ROM) from:

*OCLC Online Computer Library Center, Inc.*  
6565 Frantz Road  
Dublin, OH 43017-0702  
(800) 848-5878  
(614) 764-6000

*Quanta Press, Inc.*  
2550 University Avenue West, Suite 245N  
St. Paul, MN 55114  
(612) 641-0714

*SilverPlatter Information, Inc.*  
37 Walnut Street  
Wellesley Hills, MA 02181  
(800) 343-0064  
(617) 239-0306

## Abstracts of Journal Articles in AGRICOLA

The May issue of *ALIN* announced publication of the *List of Journals Indexed in AGRICOLA 1991*, which contains a listing of the 1,997 journal titles currently indexed in AGRICOLA. Although the records for individual titles in this publication indicate whether or not abstracts are included in AGRICOLA entries, there is not a separate listing of such titles. Therefore, for the first time *ALIN* is publishing this list of 338 "Journals Abstracted in AGRICOLA," with NAL call numbers. This list was compiled by Carol L. Dowling of NAL's Indexing Branch. For further informa-



tion contact Ms. Dowling at (301) 344-4301.

### Journals Abstracted in AGRICOLA

ACS Symposium series - American Chemical Society  
QD1.A45

Acta anatomica  
444.8 AC82

Acta horticulturae  
80 AC82

Adolescence  
HQ793.A44

Advances in agricultural biotechnology  
S494.5.B563A39

Advances in agronomy  
30 AD9

Advances in biochemical engineering/biotechnology  
TP248.3.A38

Advances in botanical research  
450 AD92

Advances in chemistry series  
381 AD93

Advances in genetics  
443 D39

Advances in inorganic biochemistry  
QD415.A1A38

Advances in lipid research  
386.2 P192

Advances in veterinary science and comparative medicine  
41.8 AD9

Advances in virus research  
448.8 AD9

Agricultural economics : the journal of the International  
Association of Agricultural Economics  
HD1401.A47

Agronomy journal  
4 AM34P

Alternatives to laboratory animals : ATLA  
Z7994.L3A5

American journal of agricultural economics  
280.8 J822

American journal of alternative agriculture  
S605.5.A43

American journal of botany  
450 AM36

American journal of clinical nutrition  
389.8 J824

American journal of physiology  
447.8 AM3

American journal of public health  
449.9 AM3J

The American journal of tropical medicine and hygiene  
448.8 AM326

American journal of veterinary research  
41.8 AM3A

Animal behaviour  
410 B77

Animal learning & behavior  
QL785.A725

Animal technology : journal of the Institute of Animal Tech  
nology

QL55.I5

Annals of botany  
450 AN7

Annals of nutrition and metabolism  
RM214.N8

The Annals of occupational hygiene  
RC963.A1A5

Annual review of nutrition  
QP141.A1A63

Appetite  
QP141.A1A64

Applied and environmental microbiology  
448.3 AP5

Applied microbiology and biotechnology  
QR1.E9

Archives of biochemistry and biophysics  
381 AR2

Archives of insect biochemistry and physiology  
QL495.A7

Archives of microbiology  
442.8 AR26

Archives of toxicology  
RA1190.A7

Archives of virology  
448.3 AR23

Atherosclerosis  
RC692.A8

Avian diseases  
41.8 AV5

Behaviour research and therapy  
RC321.B43

Biochemical and biophysical research communications  
442.8 B5236

Biochemical genetics  
QR73.B5

The Biochemical journal  
QP501.B64

Biochemical medicine and metabolic biology  
QP501.B474

Biochemical systematics and ecology  
QD415.A1B5

Biochimie  
383 SO1

Biochemistry  
381 B523

Biochemistry international  
QD415.A1B52

Biochimica et biophysica acta : International journal of  
biochemistry and biophysics

381 B522

Biological chemistry Hoppe-Seyler  
384 Z38

Biology of reproduction  
QL876.B5

Bioorganic chemistry  
QD241.B5

Biopolymers  
381 B524

- Biosensors & bioelectronics  
R856.A1B46
- Biotechnology and applied biochemistry  
QD415.A1J63
- Biotechnology and bioengineering  
381 J8224
- Biotechnology letters  
QR53.B56
- BMJ : British medical journal  
R31.B55
- BNF Nutrition bulletin - British Nutrition Foundation  
TX341.B75
- British food journal  
389.8 B77
- The British journal of nutrition  
389.8 B773
- British veterinary journal  
41.8 V643
- Canadian home economics journal  
321.8 C162
- Canadian journal of forest research = Journal canadien de  
recherche forestiere  
SD13.C35
- Carbohydrate research  
385 C172
- Child & youth care quarterly  
HV701.C514
- Child development  
RJ1.C3
- Chromosoma  
442.8 C46
- Clinical and experimental nutrition  
RC620.A1C57
- Clinical pediatrics  
RJ1.C55
- Clothing and textiles research journal  
TS1300.C54
- Comparative biochemistry and physiology : A : Comparative  
physiology  
QP1.C6
- Comparative biochemistry and physiology : B : Comparative  
biochemistry  
QP501.C6
- Comparative biochemistry and physiology : C : Comparative  
pharmacology and toxicology  
QP901.C6
- Comparative immunology, microbiology and infectious dis-  
eases  
QR180.C62
- Computer applications in the biosciences  
QH313.C65
- Concepts in toxicology  
RA1190.C66
- The Cornell hotel and restaurant administration quarterly  
TX901.C67
- Critical reviews in food science and nutrition  
TP368.C7
- Crop science  
64.8 C883
- Current genetics  
QH426.C8
- Current microbiology  
QR1.C78
- Current plant science and biotechnology in agriculture  
S494.5.B563C87
- Dairy Council digest  
389.8 D14
- Developmental biology  
442.8 D49
- Developmental genetics  
QH426.D32
- Developments in agricultural and managed-forest ecology  
S601.D4
- Developments in food microbiology  
QR115.D4
- Developments in plant and soil sciences  
S596.7.D4
- Diabetes  
RC658.A1D5
- Diabetes care  
RC660.A1D53
- Diabetes educator  
RC660.A1D522
- Digestion  
QP141.A1D5
- Digestive diseases and sciences  
448.8 AM324
- Ecology of food and nutrition  
TX341.E3
- Educational research  
LB2326.3.E3
- The EMBO journal - European molecular biology organiza-  
tion  
QH506.E46
- Environmental entomology  
QL461.E532
- Environmental research  
RA565.A1E5
- Enzyme  
QP601.E52
- European journal of biochemistry  
QP501.E8
- European journal of clinical nutrition  
QP141.A1J68
- Experimental cell research  
442.8 EX7
- Family economics review - U.S. Department of Agriculture,  
Agricultural Research Service  
aTX326.A1U5
- FEMS microbiology letters - Federation of European  
Microbiological Societies  
QR1.F44
- Fertilizer research : an international journal on fertilizer use  
and technology  
S631.F422
- Food additives and contaminants : analysis, surveillance,  
evaluation, control  
TX553.A3F65
- Food chemistry  
TX501.F6
- Food microbiology  
QR115.F66

- Food policy  
HD9000.1.F66
- Forest products journal  
99.9 F7662J
- Forest science  
99.8 F7632
- Forestry: The journal of the Institute of Chartered Foresters  
99.8 F767
- The Forestry chronicle  
99.8 F7623
- Fundamental and applied toxicology : official journal of the  
Society of Toxicology  
RA1190.F8
- Gene  
QH442.A1G4
- General and comparative endocrinology  
444.8 G28
- Genetic resources communication  
SB111.A2G4
- Genetical research  
443.8 G283
- Genetics  
442.8 G28
- Genome  
QH431.G452
- Health education  
LB3401.A57
- Health education quarterly  
RA440.A1H5
- Heredity  
443.8 H42
- Home economics research journal  
TX1.H63
- Hormone and metabolic research = Hormon- und Stoff-  
wechselsforschung = Hormones et metabolisme  
QP801.H7H65
- HortScience  
SB1.H6
- I.L.A.R. news  
QL55.A1I43
- Immunobiology  
QR180.Z4
- Immunology and cell biology  
QR180.I43
- Infection and immunity  
QR1.I57
- Insect biochemistry  
QL495.A1I57
- Insect science and its application  
QL461.I57
- International journal for development technology  
T1.I54
- International journal for parasitology  
QH547.I55
- International journal for vitamin and nutrition research  
389.8 Z33
- The International journal of biochemistry  
QD415.A1I5
- International journal of biometeorology  
340.8 IN8
- The International journal of eating disorders  
RA784.A1I5
- International journal of food microbiology  
QR115.I57
- International journal of obesity  
RC628.A1O2
- International journal of radiation applications and instru-  
mentation : Part A : Applied radiation and isotopes  
QC770.I57
- Irrigation science  
S612.I756
- JAMA : Journal of the American Medical Association  
448.9 AM37
- Journal of adolescence  
RJ499.A1J57
- Journal of adolescent research  
HQ793.J68
- Journal of agricultural and food chemistry  
381 J8223
- Journal of agricultural economics research  
aHD1401.J68
- Journal of agricultural engineering research  
58.8 J82
- Journal of animal science  
49 J82
- The Journal of applied bacteriology  
448.39 SO12
- Journal of applied polymer science  
QD471.A1J5
- Journal of applied toxicology : JAT  
RA1190.J6
- Journal of bacteriology  
448.3 J82
- Journal of biochemistry  
385 J822
- The Journal of biological chemistry  
381 J824
- Journal of biomolecular structure & dynamics  
QH506.J68
- Journal of carbohydrate chemistry  
QD320.J6
- The Journal of cell biology  
442.8 J828
- Journal of cereal science  
TX393.J6
- Journal of chemical ecology  
QD415.A1J6
- Journal of climate  
QC851.J62
- Journal of clinical microbiology  
QR46.J6
- Journal of communication  
P87.J68
- Journal of comparative physiology : A : Sensory, neural, and  
behavioral physiology  
QP33.J68
- Journal of comparative physiology : B : Biochemical, syste-  
matic, and environmental physiology  
QP33.J681
- Journal of dairy science  
44.8 J822



- Journal of developmental physiology  
QP1.J62
- Journal of drug education  
HV5808.J68
- The Journal of early adolescence  
HQ796.J62
- Journal of ecology  
450 J829
- Journal of economic entomology  
421 J822
- Journal of educational psychology  
LB1051.J6
- The Journal of endocrinology  
448.8 J8293
- Journal of environmental economics and management  
HC79.P55J6
- Journal of environmental pathology, toxicology, and oncology : official organ of the International Society for Environmental Toxicology and Cancer  
RB152.J6
- Journal of environmental quality  
QH540.J6
- Journal of essential oil research : JEOR  
SB298.J66
- Journal of ethno-pharmacology  
RS160.J6
- Journal of experimental botany  
450 J8224
- Journal of extension  
275.28 J82
- Journal of food & nutrition of Australia  
389.9 AU73
- Journal of food biochemistry  
TX545.J6
- Journal of food composition and analysis  
TX501.J68
- Journal of food engineering  
TP368.J68
- Journal of food processing and preservation  
TX599.J6
- Journal of food protection  
44.8 J824
- Journal of food quality  
TP373.5.J6
- Journal of food safety  
TP373.5.J62
- Journal of food science : an official publication of the Institute of Food Technologists  
389.8 F7322
- Journal of foodservice systems  
TX901.J54
- The Journal of general microbiology  
448.3 J823
- The Journal of general virology  
QR360.A1J6
- The Journal of heredity  
442.8 AM3
- Journal of hydrology  
292.8 J82
- The Journal of immunology  
448.8 J8232
- Journal of industrial microbiology  
QR53.J68
- Journal of inorganic biochemistry  
QD415.B5
- Journal of insect physiology  
421 J825
- Journal of invertebrate pathology  
421 J826
- Journal of lipid research  
381 J8282
- Journal of macromolecular science : Part A : chemistry  
QD471.A1J62
- Journal of marriage and the family  
HQ1.J86
- Journal of medical entomology  
421 J828
- Journal of microbiological methods  
QR65.J68
- Journal of microscopy  
440.9 R81J
- Journal of molecular biology  
442.8 J8224
- Journal of molecular evolution  
QH359.J6
- Journal of morphology  
444.8 J826
- Journal of morphology : supplement  
444.8 J826 SUPPL.
- Journal of nematology  
QL391.N4J62
- The Journal of nutrition  
389.8 J82
- Journal of nutrition education  
TX341.J6
- Journal of nutrition for the elderly  
TX361.A3J63
- The Journal of nutritional biochemistry  
QP141.A1J54
- Journal of obesity and weight regulation  
RC628.O22
- Journal of pediatric & perinatal nutrition  
RJ206.J68
- Journal of pediatric gastroenterology and nutrition  
RJ446.J68
- The Journal of pediatrics  
RJ1.A453
- Journal of plant growth regulation  
QK745.J6
- Journal of plant nutrition  
QK867.J67
- Journal of range management  
60.18 J82
- Journal of rural studies  
HT401.J68
- Journal of school health  
LB3401.J6
- The Journal of soil science  
56.8 J823
- Journal of stored products research  
421 J829

The Journal of technology transfer  
 T174.3.J68  
 Journal of the American College of Nutrition  
 RC620.A1J6  
 Journal of the American Dietetic Association  
 389.8 AM34  
 Journal of the American Society for Horticultural Science  
 81 SO12  
 Journal of the Canadian Dietetic Association  
 389.9 C1632  
 Journal of the science of food and agriculture  
 382 SO12  
 Journal of theoretical biology  
 442.8 J8223  
 Journal of thermal biology  
 QP82.2.T4J6  
 Journal of toxicology : clinical toxicology  
 RA1190.C5  
 Journal of tropical pediatrics  
 RJ1.J6  
 Journal of virological methods  
 QR355.J6  
 Journal of virology  
 QR360.J6  
 The Journal of volunteer administration  
 HV91.J68  
 Journal of wood chemistry and technology  
 TS932.J68  
 Journal of youth and adolescence  
 HQ796.J69  
 Laboratory animal science  
 410.9 P94  
 Laboratory animals  
 QL55.A1L3  
 The Lancet  
 448.8 L22  
 Life sciences  
 442.8 L62  
 M G G : Molecular and general genetics  
 442.8 Z34  
 Microbial ecology  
 QR100.M5  
 Microbiological sciences  
 QR1.M46  
 Molecular and biochemical parasitology  
 QL757.M6  
 Molecular and cellular biochemistry  
 QD501.M63  
 Molecular biology  
 QH506.A1M622  
 Molecular microbiology  
 QR74.M65  
 Nature  
 472 N21  
 New England journal of medicine  
 448.8 N442  
 New forests  
 SD409.N48  
 Nonprofit and voluntary sector quarterly  
 HV40.J68  
 North Central journal of agricultural economics  
 HD1773.A3N6  
 Northern journal of applied forestry  
 SD143.N6  
 Nucleic acids research  
 QD341.A2N8  
 Nutrition and behavior  
 QP141.A1N86  
 Nutrition and cancer  
 RC262.C5N8  
 Nutrition and health  
 RC620.A1N84  
 Nutrition and health  
 TX341.N838  
 Nutrition research  
 QP141.A1N88  
 Nutrition reviews  
 389.8 N953  
 Nutrition today  
 RA784.N8  
 Nutrition update  
 RC620.N85  
 Parasite immunology  
 RC119.7.P4  
 Pediatrics  
 RJ1.P42  
 Perspectives in ethology  
 QL751.P4  
 Pesticide biochemistry and physiology  
 SB951.P49  
 Pesticide science  
 SB951.P47  
 Photochemistry and photobiology  
 382 P56  
 Physiological and molecular plant pathology  
 SB599.P45  
 Physiology & behavior  
 QP1.P4  
 Phytochemistry  
 450 P5622  
 Phytopathology  
 464.8 P56  
 The Plant cell  
 QK725.P532  
 Plant cell reports  
 QK725.P54  
 Plant molecular biology: an international journal of fundamental research and genetic engineering  
 QK710.P62  
 Plant patent - United States Patent and Trademark Office  
 156.65 P69  
 Plant pathology  
 464.8 P692  
 Plant physiology  
 450 P692  
 Planta  
 450 P693  
 Plasmid  
 QH426.P56  
 Poultry science  
 47.8 AM33P

Preparative biochemistry  
 QD415.A1P7  
 Preventive medicine  
 RA421.P684  
 Proceedings of the National Academy of Sciences of the  
 United States of America  
 500 N21P  
 Proceedings of the Society for Experimental Biology and  
 Medicine  
 442.9 SO1  
 Progress in food and nutrition science  
 QP141.A1P72  
 Progress in nucleic acid research and molecular biology  
 386 D282  
 Prostaglandins  
 QP801.P68P729  
 Public health reports  
 151.65 P96  
 Regulatory toxicology and pharmacology : RTP  
 RA1190.R42  
 Research in veterinary science  
 41.8 R312  
 Resources policy  
 S900.R4  
 Rural sociology  
 281.28 R88  
 School food service research review  
 TX945.S344  
 Science  
 470 SCI2  
 Soil biology and biochemistry  
 S592.7.A1S6  
 Soil Science Society of America journal  
 56.9 SO3  
 Soil use and management  
 S590.S68  
 Southern journal of agricultural economics - Southern  
 Agricultural  
 Economics Association  
 HD101.S6  
 Southern journal of applied forestry  
 SD1.S63  
 Southern rural sociology : journal of the Southern Rural  
 Sociological Association, Southern Association of  
 Agricultural Scientists  
 HT401.S68  
 Soviet biotechnology  
 TP248.13.S68  
 Soviet genetics  
 QH431.A1G43  
 Soviet journal of bioorganic chemistry  
 QD415.A1S6  
 Systematic and applied microbiology  
 QR1.Z42  
 Systematic botany  
 QK95.S97  
 Systematic entomology  
 QL461.S9  
 Technical series - Society for Applied Bacteriology  
 QR41.S6  
 Tetrahedron letters  
 385 T29  
 Theoretical and applied genetics  
 442.8 Z8  
 Theriogenology  
 QP251.A1T5  
 Toxicity assessment  
 RA1221.T69  
 Toxicological and environmental chemistry  
 QD241.T6  
 Toxicology and applied pharmacology  
 391.8 T662  
 Toxicology letters  
 RA1190.T62  
 Toxicon  
 391.8 T66  
 Transactions of the A S A E  
 290.9 AM32T  
 Tree physiology  
 QK475.T74  
 Trends in biotechnology  
 TA166.T72  
 Trends in genetics  
 QH426.T74  
 UCLA symposia on molecular and cellular biology  
 QH506.U34  
 United States Department of Agriculture patents  
 aT223.V4A4  
 Virology  
 448.8 V81  
 Water resources bulletin  
 292.9 AM34  
 Water resources research  
 292.8 W295  
 Weed science  
 79.8 W41  
 Wood science and technology  
 SD433.A1W6  
 World review of nutrition and dietetics  
 389.1 W892  
 Xenobiotica  
 QD415.A1X4  
 Youth & society  
 HQ793.Y6

## AGROVOC Classification Project

In the latter quarter of 1990, CAB International began work on a classified structure for the *CAB Thesaurus*. Since all parties involved in the Unified Agricultural Thesaurus (UAT) enterprise agreed that the only way to determine the feasibility of reconciling the *CAB Thesaurus* and *AGROVOC* was to compare classified, rather than alphabetical, versions of the two thesauri, it was imperative that work begin on developing a classified structure for *AGROVOC* to compare to CABI's preliminary work. In March of 1991, the Thesaurus Management Section in the



Indexing Branch at the National Agricultural Library (NAL) proposed to begin such a project. This proposal was met with enthusiasm and offers of cooperation by Emile Samaha, AGRIS, FAO.

NAL worked with a photocopy of a preprint of the full second edition of *AGROVOC*. Although AGRIS generously provided NAL with printouts of a list restricted to top terms in *AGROVOC*, i.e., all terms which have no broader term (BT), the team chose not to work with this version since it did not want to be biased toward current hierarchical divisions in *AGROVOC*. The team hoped to discover some relationships that might be overlooked if it worked only with top terms. (Since time was limited, two classes of terms were excluded from this initial analysis, taxonomic names and proper names of geographic units. Classification of such terms is quite straightforward in comparison to the more problematic topical terms.)

Although the team felt sure that the final outline would be traditionally discipline- and subject-area based, work did not begin this way. Believing that a faceted approach would impose a different and potentially valuable mind-set, the team developed a list of fundamental facets and used this list to sort descriptors into 35 very broad categories, some as broad as Operations, Processes and Phenomena, and Attributes; none were much narrower than Chemicals.

Next, rough secondary sorts were done on most of these categories. Finally, an overall outline classification was developed. Sorting of entries from the broad categories into this outline resulted in further refinement of the outline itself, a process which will undoubtedly be ongoing through many iterations.

At this point, thanks to the joint support of NAL and FAO, Monique Bonnichon of AGRIS, came to NAL from Rome to work intensively with the four-member NAL team (Martha Hood, Lori Starr, Deana Parks, Judy Torgerson). For a full week, from May 6 to 10, the team evaluated and further refined the classification. At the end of the week, the

team compared its outline classification to that developed by CABI. Team members were pleased to see that, although there are differences, there are also large areas of substantial agreement. NAL will continue to work on the preliminary classification over the next several months in preparation for joint NAL, FAO, and CABI meetings designed to bring the CABI and the NAL/FAO draft classifications even closer together.

—Martha Hood



## News Notes

# Compiler of New Union List of Serials Works in NAL Technical Services

Just published, *The Union Catalog of Serials in International Agricultural Research Centers (IARCs)* was compiled by Nalini Basavaraj, a University of Maryland CLIS Graduate Assistant, who began working at the National Agricultural Library in the Technical Services Division in January, 1991. The new catalog is a source of information that facilitates access to information, and it reveals Ms. Basavaraj's interest and growing commitment to universally shared scientific and scholarly information. The box on the next page lists all of the IARCs included in the Union Catalog.

Nalini Basavaraj was the Assistant Library Officer at the International Crops Research Institute for the Semi-Arid Tropics, Andhra Pradesh, India. She was responsible for compiling, standardizing, editing, and organizing the 5,200 entries in the *Union Catalog of Serials in International Agricultural Research Centers (IARCs)* prior to her arrival at NAL and the University of Maryland. This three and one-half year project resulted in a database available as a BASIS and as a micro CDS/ISIS (version 2.3) application, as well as the very recently published hard edition. Nalini Basavaraj's expertise is currently focused on the *World List of Agricultural Serials (WLAS)* Project updating and creating new records for the world serial list from the IARC's catalog she compiled.

A native of Mysore, Karnataka, India, Ms. Basavaraj has earned a B.Sc. in Botany, Chemistry and Zoology, a B.Lib.Sc. and an M.Lib.Sc. in Library Science from the



photo: J. Swab

The *AGROVOC* classification project staff, literally cutting and pasting terms into hierarchies, included (L-R) Lori Starr, Judy Torgerson, Martha Hood, Monique Bonnichon, and Deana Parks.



photo: J. Swab

Nalini Basavaraj

University of Mysore. Continuing her education, Ms. Basavaraj is seeking an MA in Library Science at the University of Maryland, where she hopes to acquire diverse technological expertise that will enable her to discover information sources and fill information needs. This September she plans to take courses in database management and the design of information products.

Ms. Basavaraj has been photographing trees and plants this spring and summer,

attempting to capture the "lush, shimmering foliage and bloom" she sees in American vegetation. Fortunately, she will have more than one spring in the United States to appreciate the "bright colors and harmony" of American plant life.

Ms. Basavaraj's Graduate Assistantship expires December, 1992.

—Christine De Bow Klein



## Aquaculture

# USDA Evaluation Study on Aquaculture Begins

The USDA evaluation study, titled "National Profile of Information Needs in Aquaculture" got underway at NAL on April 1 with a Working Committee meeting represented by nine leaders in extension, private sector, and library and information sciences.

This evaluation study was funded by Dr. Charles E. Hess, Assistant Secretary, Science and Education, U.S. Department of Agriculture, and represents a collaborative effort between the USDA Extension Service and the Aquaculture Information Center, NAL. Eileen McVey, Aquaculture Information Center, will be coordinating this project. The study will statistically analyze information requests representing a myriad of practical and technical questions that have been received by the Aquaculture Information Center

## International Agricultural Research Centers Participating in the Union List of Serials

### Consultative Group on International Agricultural Research (CGIAR), Washington, DC, USA.

Asian Vegetable Research and Development Center (AVRDC), Shanhua, Tainan, Taiwan, Republic of China.

Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia.

Centro Internacional de Mejoramiento de Maiz y Trigo (CIMMYT), Mexico, D.F., Mexico.

Centro Internacional de la Papa (CIP), Lima, Peru.

International Center for Agricultural Research in the Dry Areas (ICARDA), Aleppo, Syria.

International Center for Insect Physiology and Ecology (ICIPE), Nairobi, Kenya.

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, Andhra Pradesh, India.

International Food Policy Research Institute (IFPRI), Washington, DC, USA.

International Irrigation Management Institute (IIMI), Colombo, Sri Lanka.

International Livestock Center for Africa (ILCA), Addis Ababa, Ethiopia.

International Laboratory for Research on Animal Diseases (ILRAD), Nairobi, Kenya.

International Rice Research Institute (IRRI), Manila, Philippines.

ICRISAT Sahelian Center (ISC), Niamey, Niger (via Paris).

International Service for National Agricultural Research (ISNAR), The Hague, Netherlands.

Those interested in obtaining a copy of the *Union Catalog* may contact: International Crops Research Institute for the Semi-Arid Tropics, Patancheru, Andhra Pradesh 502 324, India. Telex: 422203 ICRI IN or 4256366 ICRI IN; Fax: + 91(842)241239; E-mail: Dialcom 157: CGI505; Phone: + 91(842) 224016.

since its inception by Congressional mandate in 1985. Trends by subject, geography, and user affiliation will be profiled and analyzed in the final report expected to be published in early 1992. To date, at least 3,000 requests have been entered into a machine-readable form for analysis.

Trends in aquaculture will provide the Aquaculture Information Center and Extension with a more solid framework to address aquaculture information needs at state, regional, and national levels. Results should also identify overlap in information services provided by Federal agencies, thereby reducing duplication of efforts and expense. A study of this type and scope on an agricultural industry has not yet been done.

"The Working Committee played a major role in the planning of this study," says Deborah Hanfman, Coordinator, Aquaculture Information Center. "The group has been instrumental in identifying major subject and user





photo: B. Norris

Participants in the organizing and planning meeting of the aquaculture evaluation study were study team members or their representatives: (L-R) Sarojini Balachandran, Head, Department of Sciences and Technology, Ralph Brown Draughon Library, Auburn University, Auburn, Alabama; Ann Townsend Young, Coordinator of the State Networks Project for the study, AIC, NAL; Keith Russell, Associate Director for Public Services, NAL; Deborah Hanfman, manager of the contract for this project, Coordinator, Aquaculture Information Center (AIC), NAL; Jan Kennedy Olsen, Director, Mann Library, Cornell University, Ithaca, New York; Meryl Broussard, Principal Aquaculture Scientist, Cooperative State Research Service, USDA, representing Gary Jensen, Aquaculture Program Leader, Extension Service, USDA; Todd F. Powless, Director of Aquaculture Feeds, Zeigler Bros., Inc., Gardners, Pennsylvania, representing Thomas Zeigler, Zeigler Bros., Inc. The coordinator of the evaluation study, who was not present at this meeting, is Eileen McVey, AIC, NAL. Two other participants missing from this photograph are Bradley H. Powers, Aquaculture Coordinator, Office of Aquaculture, Maryland Department of Agriculture, Annapolis, and President of the newly formed National Association of State Aquaculture Coordinators; and David Coleman, Librarian, Science and Technology Department, Hamilton Library, University of Hawaii.

categories that should be addressed in the study. They provide an excellent cross-cut of expertise from the Federal, state, university, and private sectors." In addition to planning, the Working Committee reviewed and modified two user assessment forms, titled "Review of Aquaculture Information Needs". These forms were subsequently mailed to all state aquaculture extension offices and the state departments of agriculture. Feedback will be incorporated into the evaluation report and represent information needs from the viewpoints of state aquaculture specialists.

The committee will reconvene in November to discuss the project's progress and peer review the draft report.

— Deborah Hanfman

## United States Agricultural Information Network National Conference

Hubert Humphrey Conference Center  
University of Minnesota  
Minneapolis, Minnesota  
October 14-16, 1991

Preconference  
National Preservation Planning in Agriculture  
October 12-13, 1991

### Preliminary Program and Registration Information

#### An Invitation:

The theme of the second national conference of the United States Agricultural Information Network (USAIN) is "Electronic Information in the Agricultural Sciences." Building on the success of last year's inaugural meeting, this conference will bring together experts in information technology, extension, librarianship, agribusiness, research, and information policy. The program will provide opportunities for learning, debate, collegial networking, discussing recent accomplishments, and sharing a vision for the future of agricultural information.





## Program Summary:

### Day 1: Defining the Electronic Library for Agriculture

- -what is the electronic library?
- -how do the worlds of extension and libraries intersect in the electronic environment?
- -how are colleagues meeting the challenges of the electronic library?

### Day 2: Understanding Our Environment and Preserving Our Heritage

- -what are the political and social trends affecting land-grant institutions?
- -how will we preserve our agricultural information heritage?

### Day 3: Access to Electronic Information from Government Sources

- -how are major commercial vendors providing access to information from the government?
- -what are the trends in federal information policy?
- -how can librarians insure the availability of electronic information from government sources?

The program will provide opportunities to discuss issues with national experts, review and learn from project accomplishments, and investigate new products. The membership will also have the opportunity this year to participate in setting directions for national preservation efforts in agriculture and related subjects. In addition, committees formed last year will meet again this year to continue their work.

We invite those of you who were with us last year, and newcomers, to join us at our second national conference. The registration fee includes attendance at the program, tours of local libraries, and a reception at the University of Minnesota Arboretum.

## Preliminary Program

### MONDAY, OCTOBER 14, 1991: Defining the Electronic Library

8am-9am Registration and Coffee

9-10:00am Plenary Session 1

Welcome to the Second National USAIN Conference: Julia Peterson, President, United States Agricultural Information Network

Keynote Address: An Electronic Library for the Agricultural Sciences: Speaker: Jan Olsen, Director, Albert R. Mann Library, Cornell University

An electronic library comprises a number of information genre provided at computer workstations in the workplace, wherever that may be. Ms. Olsen will present this vision, discuss its significance to agriculture, and describe a model being implemented at Cornell.

10-10:30am Exhibit Opening and Break

Exhibits are open 10am-4pm Monday and 10:30am-4:30pm Tuesday.

Products from SilverPlatter and a number of other vendors important to the agricultural information community will be on display during the USAIN meeting.

10:30am-noon Plenary Session 2

Extension in the Electronic Environment: A presentation and discussion regarding plans for the use of information technology in extension and their relationship to electronic libraries.

Information Technology and Extension: Speaker: Janet Poley, Director, Communication Information and Technology Extension Services, USDA

Ms. Poley will describe the potentials of computing and networking technologies for the extension community, including recommendations presented in Future Application of Information Technology Across the Cooperative Extension System. Libraries' roles in working with extension to provide electronic information to the agricultural community will also be discussed.

National Networks: Present and Future: Speaker: Paul Evan Peters, Director, Coalition for Networked Information

Mr. Peters will present an overview of the national networks, discussing important developments to be anticipated and crucial challenges to be faced by the information community, including agricultural information specialists.

noon-2:00pm Lunch & Speaker

Electronic Information and the Farmer: Speaker: Newell Searle, PhD, Assistant Secretary of Agriculture for the State of Minnesota

2-3:30pm Plenary Session 3

Focus Groups: Building the Electronic Library:

Meeting attendees can choose between three concurrent sessions. Presentations will be followed by opportunities for discussion. Please indicate on the meeting registration form your first and second choices of blocks.

### Block 1: Organizing and storing Electronic Information

The Cargill Technical Network: Kathi Kohli, Senior Reference Librarian, Cargill Information Center

Ornamental Horticulture on a Multimedia CD-ROM: Pamela Mason, Automation Librarian, NAL

The Role of the National Agricultural Library in the USDA Plant Genome Research Program: Pamela Q. J. Andre, Associate Director for Automation, NAL; Keith W. Russell, Associate Director for Public Services, NAL; Sarah E. Thomas, Associate Director for Technical Services, NAL

### Block 2: Transmitting Information via Electronic Networks

The Pennsylvania Extension Network: PENPages and More: Helen Smith, Agriculture Librarian, Penn State University

Document Transmission Project: Susan Nutter, Director, North Carolina State University Library

### Block 3: Cooperating in the Electronic World

The Core Agricultural Literature Project: Wallace C. Olsen, Director, Core Agricultural Literature Project, Mann Library, Cornell University.

(Continued next page.)

Provision of Information Services to Agriculture Research Libraries at Remote Laboratories: Peggy J. Beavers, Coordinator of Library Services to the Agricultural Research Service, NAL; Keith W. Russell, Associate Director for Public Services, NAL; Ted S. Sibia, Head, Bio/Ag Department, Shields Library, University of California, Davis

**3:30-4pm**      **Break; Exhibits remain open until 4pm.**

**4-5pm**      **Plenary Session 4: 1991 in Review**

User Perceptions of Agricola: Report of a National Survey: Mike Fassino, Managing Director, Fassino Associates

Update: National Agricultural Library: Joe Howard, Director, National Agricultural Library

Update: IAALD: Joe Howard, President, IAALD

Update: United States Agricultural Information Network (USAIN): Julia Peterson, President, USAIN

**5-6:30pm**      **Committee and Interest Group Meetings**

Committees and interest groups established last year will meet to review their accomplishments and plan the next year's activities. Those who are not members, but who are interested in joining and participating, are welcome to attend. Committees and interest groups include:

*Telecommunications and Networking*, Nancy Eaton, Chair

*Membership*, Rita Fisher, Chair

*Document Delivery*, Carol Armstrong, Chair

*Collection Management*, Brice Hobrock, Chair

*AGRICOLA*, Shirley Edwards, Chair

*Rural Information*, Elizabeth Fuseler-McDowell, Chair

*Legislation and Government*, Elaine Albright, Chair

**7pm-9pm**      **Hospitality Room:**

An opportunity to network, to catch up with old friends, to share news, and to enjoy refreshments in an informal drop-in atmosphere.

**TUESDAY, OCTOBER 15, 1991: Understanding Our Environment and Preserving Our Heritage**

**9-10:30am**      **Plenary Session 5**

**The 1860 Land Grant Institutions:** Speaker: G. Edward Schuh, Dean, Hubert H. Humphrey Institute of Public Affairs, University of Minnesota

Political and social trends effecting land grant institutions will be discussed in order to provide information specialists with enhanced knowledge of a component of the environment in which agricultural information is generated.

**The 1890 Land Grant Institutions**

**10:30-11am**      **Break; Exhibits open at 10:30**

**11-noon**      **Plenary Session 6**

**Agricultural Research Initiative:** Speaker: John Patrick Jordan, Administrator, Cooperative State Research Service, USDA

Research is another component of the agricultural information environment. Mr. Jordan administers the office responsible for grant programs agricultural stations and land grant colleges.

**noon-1:30pm**      **Lunch Business Meeting**

Reports from Committee and Interest Group Chairs

**1:30-3pm**      **Plenary Session 7**

**Steps Toward a National Preservation Plan for Agriculture:** Moderator: Brice Hobrock, Director, Farrell Library, Kansas State University

A preconference on national preservation planning for agriculture will be held on Saturday and Sunday, October 12 and 13, 1991. The results of this preconference will be presented by a panel of preconference discussion group leaders. This will be followed by a discussion of the feasibility of continuing work within USAIN towards a national preservation plan for agricultural sciences literature.

**3-3:30pm**      **Break; Exhibits stay open until 4:30pm.**

**3:30-4:30pm**      **Plenary Session 8**

**Reports from the Field**

In contributed papers, USAIN members present issues and projects involved in electronic library development.

**4:30-8:00pm**      **Reception in the University of Minnesota Arboretum**

The day's activities conclude with a gathering of the conference attendees at the beautiful arboretum of the University of Minnesota. A tour of the arboretum will be followed by a reception. Bus transportation will be provided.

**WEDNESDAY, OCTOBER 16, 1991: Access to Government Information**

**9-10:15am**      **Plenary Session 9**

**Access to Economic Information from the Federal Government—A Vendor Perspective**

Representatives of commercial information vendors will describe their roles in providing access to electronic information generated by the government. Presentors include Martin Marietta, Agridata, and others.

**10:15-10:45am**      **Break**

**10:45-11:30am**      **Plenary Session 10**

**Trends in Federal Information Policy:** Speaker: Gary Bass, Executive Director, OMB Watch

OMB Watch is a nonprofit research, educational, and advocacy organization that monitors Executive Branch activities and encourages broad public participation in government decision-making to promote a more open and accountable federal government.

**11:30-12:15pm**      **The Role of Agricultural Libraries in Access to Federal Information**

Agricultural information specialists must take an active role to insure that information issued by the government in electronic form is available in a timely and usable fashion. Key issues for agricultural information, and strategies that may be employed, will be discussed.

(Continued next page.)





**USAIN - United States Agricultural Information Network  
National Conference**

**October 14-16, 1991**

**University of Minnesota  
The Humphrey Institute Conference Center  
Minneapolis, Minnesota**

Name \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_

**Fee: \$100.00 USAIN Members**

**\$115.00 non-members will qualify for 1 year membership in USAIN**  
Make checks payable to: United States Agricultural Information Network. Send completed registration form and check to Julia Peterson, Cargill Information Center, P.O. Box 5670, Minneapolis, MN 55440.

**Deadline for registration is September 30, 1991.**

Rooms have been reserved at a rate of \$60.00 for a single and \$70.00 for a double at the Holiday Inn Metrodome, 1500 Washington Avenue South, Minneapolis, MN 55454. Phone (612) 333-4646. Be sure to say that you are attending the USAIN Conference to obtain the reduced rate.

**MAKE YOUR OWN ROOM RESERVATIONS. DEADLINE FOR HOTEL RESERVATIONS IS SEPTEMBER 11, 1991!**

Registration is limited to 150 people for the USAIN Conference.  
Registration is limited to 50 people for the Pre-conference - National Preservation Planning in Agriculture.

Clip or xerox this form and return with registration payment to Julia Peterson by September 30, 1991.

**12:15-2pm Lunch**

Included in the registration fee, the final full gathering of conference attendees will take place in the lovely atmosphere of the University of Minnesota's Raptor Center. Tour to follow lunch.

**2-4pm Tours of Agricultural Libraries and Demonstration of Text Transmission**

Visits to several of the libraries at the University of Minnesota are being planned, including the libraries of Agriculture, Plant Pathology, Forestry, and Biotechnology. A demonstration of transmitting full-texts of documents via the Internet will be given at the Agriculture Library during the afternoon.

**CONFERENCE ENDS**



**A Preconference to the USAIN Annual Meeting**

**Collection Management Interest Group**

**National Preservation Planning in Agriculture**

a working meeting to explore the idea of a national preservation plan for the agricultural sciences.

**October 12 & 13, 1991**

**University of Minnesota**

**The Humphrey Institute Conference Center**

**SATURDAY, OCTOBER 12, 1991**

**12:30-1:30 Registration**

**1:30-3:15 Background Presentations**

**1:30-1:45 Welcome and overview**

**1:45-2:15 Nature of the agricultural sciences literature and status of preservation efforts.** Samuel Demas, Head, Collection Development & Preservation, Mann Library, Cornell University



Please check additional items you will be attending. (There is no charge for these additional items)

☐ Pre-Conference on Preservation, October 12 and 13, 1991

Concurrent Sessions - building the Electronic Library

Indicate first and second choice  
October 14, 1991 2:00-3:30pm

☐ Block 1: Organizing and Storing Electronic Information

The Cargill Technical Network

Kathi Kohli, Senior Reference Librarian

Cargill Information Center

Ornamental Horticulture on a Multimedia CD-ROM

Pamela Mason, Automation Librarian

☐ Block 2: Transmitting Information via Electronic Networks

PENPages

Helen Smith, Agriculture Librarian

Penn State University

Full text transmission over the national networks

☐ Block 3: Cooperating in the Electronic World

The Core Agricultural Literature Project

Wallace C. Olsen, Director

Core Agricultural Literature Project

Mann Library, Cornell University

☐ Campus Library Tours, October 16, 2-4pm

☐ Agriculture Library - Text Transmission Demo

☐ Plant Pathology Library

☐ Forestry Library

☐ Biochemistry/Biotechnology Library



Clip or xerox this form and return with registration payment to Julia Peterson by September 30, 1991.

**2:15-2:45 Review of existing national preservation models.** George Farr, Director, Division of Preservation and Access, National Endowment for the Humanities

**2:45-3:15 Preservation technologies and cooperative preservation: the state of the art.** Margaret Byrne, Preservation Officer, National Library of Medicine

**3:15-3:45 Break**

**3:45-4:30 The Core Historical Literature Project**  
Introduction: Joe Howard, NAL  
Project overview: Wallace C. Olsen, Project Director, Core Literature Project, Mann Library, Cornell University.

**4:30-6:00 Case study on models and issues: break-out session** Organizer: Brice Hobrock, Director, Farrell Library, Kansas State University, assisted by 6 group leaders. Topic: Can we use the identification of core literature as part of a national plan for the preservation of agricultural literature? Assigned group leaders will facilitate small group discussions designed to:

1. Develop possible model(s), and
2. Identify the related questions and issues which would be faced in implementing these models.

**6:00-7:15 Wine and cheese reception**

**SUNDAY, OCTOBER 13, 1991**

**10:00-12:30 Case study results & Focus Groups**

**10:00-10:45 Results of case study:** Group leaders will present the models/approaches which emerged and the related issues and questions identified in breakout sessions.

**10:45-12:30 Focus group sessions:** addressing related questions/issues. Facilitated by assigned group leaders, the specific questions and issues which would have to be addressed in implementing a national preservation plan will be discussed in detail. Participants will be assigned to specific focus groups according to expertise and experience.

**12:30-2:30 Lunch**

**2:30-4:00 Focus group summary and next steps**

**2:30-3:15 Results of focus groups:** Group leaders will summarize the key issues, strategies and suggestions on implementation of a national preservation plan for

agricultural sciences literature.

### 3:15-4:00 Next Steps: Brice Hobrock

Where do we go from here? Discussion of the most likely approaches and strategies for moving towards a national preservation plan. The results of the preconference discussions will be presented to the USAIN annual meeting in a Tuesday afternoon session.

## END OF PRE-CONFERENCE

## PRESERVATION PRECONFERENCE

**Purpose and objectives:** Developing national strategies for preservation is a major challenge to libraries in the 1990's. The focus of preservation must go beyond individual titles and collections to address systemic, coordinated preservation of the literature of disciplines, i.e., to preserve a "national collection." The purpose of this meeting is to explore the feasibility of a national preservation plan for the agricultural sciences.

U.S. agricultural libraries are ideally positioned for a coordinated approach to preservation. With the leadership of USAIN and the National Agricultural Library, with experience in cooperative preservation projects, and with the mandate of land grant legislation, a unique commonality of interests and unity of purpose exist. A potential building block in a national preservation plan is the Cornell project to identify the core historical literature of 7 disciplines comprising the agricultural sciences. One purpose of this preconference program is to explore the possibility of using this work as part of a national preservation plan for agricultural sciences literature.

This will be a working meeting. Attendees will be expected to participate actively through small group discussions. The objectives of the discussion groups are to formulate possible models for coordinated preservation and to identify and explore the issues and questions which have to be addressed in implementing these ideas.

Speakers, group leaders and the preconference planning committee will meet after each discussion session to synthesize the results, which will then be presented to inform the next set of discussions. Through this process the preconference will develop strategies for pursuing the concept of a national preservation plan for the agricultural sciences. These will be presented to the USAIN membership. USAIN will decide whether to pursue further the idea of a national preservation plan for agricultural sciences literature.

**Audience:** Decision-makers in agricultural libraries, including: administrators, collection development and preservation officers, and those in public services, technical services, and information technology with an interest in preservation.

**Location:** The Humphrey Institute Conference Center of Minnesota.

**Fees, Housing and Meals:** There is no registration fee. Active participation in discussions and contribution of expertise are the price of admission. Registrants are invited to attend a free reception Saturday evening. Meals are not included in the preconference program. Housing may be arranged through the regular USAIN conference registration process.

**Registration:** To ensure an atmosphere conducive to close interaction among participants, registration will be limited to 50 persons. In case of over-enrollment, priority will be given to ensure representation of geographic regions & types of libraries and an appropriate balance of expertise. To register, mark box on registration form and mail before September 30, 1991.

**Preconference Planning Committee:** Sam Demas, Cornell University, Chairperson; Pam Andre, NAL; Richard Bradberry, Delaware State College; Bob Butler, NAL; Brice Hobrock, Kansas State University; Peggy Johnson, University of Minnesota; Paul Metz, Virginia Polytechnic Institute; Jan Olsen, Cornell University.

**For further information contact:** Samuel Demas, Mann Library, Cornell University, Ithaca N.Y., 14853. Voice: (607) 255-6919; FAX (607) 255-0850; e-mail: ekzy@cornell-la.bitnet. or Peggy Johnson, St. Paul Campus Libraries, University of Minnesota Twin Cities, 309 19th Ave. S., Minneapolis, MN 55455. Voice: (612) 624-1720; FAX (612) 624-9245; e-mail: m-john@uminn.bitnet.

## 1991 USAIN Conference Scholarship

\$500.00 and waived Registration Fee to attend the 1991 USAIN Conference.

Available to any librarian recently entering the field of Agricultural Information.

Please send a letter of explanation and interest to: Julia Peterson, President of USAIN, Cargill Information Center, P.O. Box 5670, Minneapolis, MN 55440

Deadline is September 30, 1991

**Return MEETING REGISTRATION FORM on pages 21-22 by September 30, 1991, to the following address:**

Julia Peterson, President USAIN  
Cargill Information Center  
P.O. Box 5670  
Minneapolis, MN 55440

**Make registration check payable to:**  
*United States Agricultural Information Network*





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National Agricultural Library  
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AGRICULTURAL LIBRARIES  
INFORMATION NOTES  
ISSN 0095-2699

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## International Visitors



### AGRICULTURAL LIBRARIES INFORMATION NOTES

(ISSN 0095-2699)

provides a channel of communication to technical information specialists, librarians, extension workers, researchers, and scientists on agricultural information activities.

Joseph N. Swab, Editor.

Idalia Acosta, New Serials Editor.

Ruth Finnblade, Publications Exchange Editor.

Daniel Starr, Photographer.

[(301)-344-3937]

Among the international visitors at the National Agricultural Library since *ALIN* last reported on such visitors were:

(Above, second from right) Mr. V. Nazarenko, Director of the All-Union Research Institute of Information and Technological Studies of Agroindustrial Complex, USSR. Mr. Nazarenko was interested in the technology NAL uses to manage the Library's collections and agricultural information. He is seen with (L-R), NAL Director Joseph H. Howard, Pamela Andre, Associate Director for Automation, NAL, and Sarah E. Thomas, Associate Director for Technical Services.

(Left) Mr. Nzindukiyimana Augustin, a journal editor from Rwanda, and Arva C. Floyd, a consultant accompanying him. Mr. Nzindukiyimana was particularly interested in the Library's publication program, including production and distribution.

